REMARKS/ARGUMENTS

Claims 1-3 are pending in this Application.

Claims 1-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brebels et al. (US Patent 5,675,295) in view of Kornrumpf et al. (US Patent 5,355,102), further in view of Carey et al. (US Patent 5,219,787), further in view of Ohya et al. (US Patent 5,686,172) and further in view of at least one of Trinh et al. (US Patent 5,132,648), Peterson (US Patent 5,574,415), and Kroger (US Patent 4,490,733). Applicants respectfully traverse the rejection of claims 1-3.

Claim 1 recites:

> "A method of producing a thin film circuit board used as a milli-wave or micro-wave module, the method comprising steps of:
> cleaning a substrate comprising dielectric ceramic, and having a thickness of 0.05 mm to 2 mm and a flexural strength of 500 kgf/cm^2 to 4000 kgf/cm^2;
> forming a conductor film in a predetermined pattern on the substrate, said conductor film including at least one selected from Cu, Au, Ag, Al, Ni, Ti, Cr, Ni-Cr, Nb, and V;
> **forming an insulating film on the substrate to cover the conductor film, said insulating film comprising at least one organic resin selected from polyimide, epoxy resins, benzocyclobutene resins, acrylic resins, and cyclic olefin resins, and having a thickness of 20 μm or greater, an area of 5 cm^2 or less per pattern,** and a stress of 15 MPa to 60 MPa;
> patterning the insulating film; and
> **repeating the insulating film forming step and the insulating film patterning step more than once.**" (emphasis added)

Applicants' claim 1 recites the features of "forming an insulating film on the substrate to cover the conductor film, said insulating film comprising at least one organic resin selected from polyimide, epoxy resins, benzocyclobutene resins, acrylic resins, and cyclic olefin resins, and having a thickness of 20 μm or greater, an area of 5 cm^2 or less per pattern" and "repeating the insulating film forming step and the insulating film patterning step more than once." With the improved features of claim 1, Applicants have been able to provide an improved method of producing a thin film circuit board

even when an insulating film comprising an organic resin is thickened (see, for example, the paragraph bridging pages 3 and 4 of the Specification).

Applicants' agree with the Examiner that Brebels et al. fails to teach or suggest the features of "cleaning a substrate comprising dielectric ceramic, and having a thickness of 0.05 mm to 2 mm and a flexural strength of 500 kgf/cm^2 to 4000 kgf/cm^2" and "said conductor film including at least one selected from Cu, Au, Ag, Al, Ni, Ti, Cr, Ni-Cr, Nb, and V."

First, the Examiner has alleged in the paragraph bridging pages 3 and 4 of the outstanding Office Action that Brebels et al. teaches that "[t]he transceiver (also interpreted as a module) is designed for compactness (including a thin film circuit board having a pattern area of 5 cm^2 or less) and robustness (column 4, lines 35-37)." Lines 35-37 of Brebels et al. relied upon by the Examiner states that "[f]urther advantages of the transceiver according to the present invention may be compactness and robustness of the design." The Examiner has completely failed to explain how one of ordinary skill in the art would divine from this portion of Brebels et al. that the terms "compactness" and "robustness" require that insulting film patterns must have an area of 5 cm^2 or less as recited in Applicants' claim 1.

The Examiner is reminded that prior art rejections must be based on evidence. Graham v. John Deere Co., 383 U.S. 117 (1966). The Examiner is hereby requested to cite a reference in support of his position that one of ordinary skill of art would have understood Brebels et al.'s use of the terms "compactness" and "robustness" to require that the insulting film patterns have an area of 5 cm^2 or less. If the rejection is based on facts within the personal knowledge of the Examiner, the data should be supported as specifically as possible and the rejection must be supported by an affidavit from the Examiner, which would be subject to contradiction or explanation by affidavit of Applicants or other persons. See 37 C.F.R. § 1.104(d)(2).

Thus, Applicants respectfully submit that Brebels fails to teach or suggest the feature of "an area of 5 cm^2 or less per pattern" as recited in Applicants' claim 1.

Second, as argued in the previous Amendment dated September 2, 2003, Brebels et al. fails to teach or suggest the feature of "repeating the insulating film forming step and the insulating film **patterning step** more than once" (emphasis added) as recited in Applicants' claim 1. Lines 66 and 67 of column 19 of Brebels et al. state that "[t]he low dielectric constant material **81** that is not under the patch **84** or the feed line **86** is removed by dry etching." That is, Brebels et al. teaches only **one** step of patterning the insulating film **81**, **NOT two** steps of patterning the insulating film as recited in Applicants' claim 1. Thus, Brebels et al. fails to teach or suggest the feature of "repeating the insulating film forming step and the insulating film patterning step more than once" as recited in Applicants' claim 1.

Third, the Examiner has relied upon Kornrumpf et al. to teach the use of a ceramic substrate with a thickness of "0.05 mm to 2 mm" as recited in Applicants' claim 1. The Examiner has alleged in the paragraph bridging pages 6 and 7 of the outstanding Office Action that one of ordinary skill in the would have combined the ceramic substrate of Kornrumpf et al. having a thickness of 0.635 mm to 2.54 mm with the device of Brebels et al. "in order to form a high density interconnect structure in a manner that provides close impedance matching, minimizes impedance discontinuities, and substantially increases the yield of good circuits." However, the Examiner has completely failed to explain how replacing the substrate of Brebels et al. with a ceramic substrate **16** having a **thickness** of 0.635 mm to 2.54 mm as taught by Kornrumpf et al. affects any of the Examiner's proposed motivations for combining the teachings of Brebels et al. and Kornrumpf et al. Thus, the Examiner has failed to provide a proper motivation for combining the teachings of Brebels et al. and Kornrumpf et al.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Brebels et al. in view of Kornrumpf et al., further in view of Carey et al., further in view of Ohya et al. and further in view of at least one of Trinh et al., Peterson, and Kroger.

Accordingly, Applicants respectfully submit that none of the prior art of record,

applied alone or in combination, teaches or suggests the unique combination and arrangement of elements recited in claim 1 of the present application. Claims 2 and 3 depend upon claim 1 and are therefore allowable for at least the reasons that claim 1 is allowable.

In view of the foregoing remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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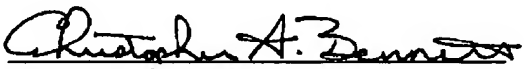

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